



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,181	04/22/2004	Klaus-Dieter Nittel	CHEMMT-206.1 CON	7728
24972 7590 06/30/2010 FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198			EXAMINER ZHENG, LOIS L	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 06/30/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 17 and 21 are amended in view of applicant's response filed 24 May 2010. Claims 1-16 are canceled. New claims 26-27 are added. Therefore, claims 17-27 are currently under examination.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 17-19, 22 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. US 3,860,455(Hansen) in view of Clifford et al. US 2,375,468 (Clifford).

Hansen teaches a manganese phosphate coating method for treating steel surfaces utilizing a coating composition that overlaps the composition instantly claimed, including the concentrations ranges of iron(II), manganese, phosphate, nitrate, wherein the free acid, total acid and S-value (ratio of free phosphate to total phosphate ions) are also overlapping, as recited in claims 17 and 19 (col. 2, lines 10-33). Hansen further teaches the addition of additional components, including nickel, in a range that overlaps the claimed range, as recited in claim 22 (col. 2, line 65 to col. 3, line 7).

However, Hansen does not explicitly teach the claimed nitroguanidine and its claimed concentration.

Clifford teaches that accelerators, such as nitroguanidine, accelerate the action of manganese phosphating conversion coating solutions “to so great an extent that it can be affected in the cold” (col. 2, lines 16-27, 48-51; Example 1).

Regarding claims 17-19 and 22, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to add nitroguanidine to the coating solution of Hansen in order to accelerate the coating method and allow the coating to take place in a cold environment as taught in Clifford (col. 2, lines 48-51).

In addition, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the coating composition taught by the Hansen in view of Clifford overlaps that of the instant claims, In re Peterson, 65 USPQ2d 1379, In re Malagari, 182 USPQ 549, and MPEP 2144.05.

Regarding the claimed manganese phosphate thickness and average maximum roughness depth, since the coating thickness varies depending upon the length of the coating time and the coating time as taught by Hansen (col. 4 lines 54-57) overlaps the coating time as discussed in the instant specification. Therefore, one of ordinary skill in the art would have found the claimed coating thickness and the claimed average maximum roughness obvious since Hansen in view of Clifford teaches a coating process that uses a substantially the same coating solution for substantially the same period of time as the process disclosed in the instant invention.

Regarding claim 26, the instant claim is mostly rejected for the same reasons set forth in the rejection of claim 17 above. Hansen teaches the presence of additives in the coating solution in addition to the essential components such as nitrate, phosphate and manganese(col. 2 line 65 – col. 3 line 3). Since the instant claim uses semi-open transitional phrase “comprises essentially of”, applicant has the burden of showing that the introduction of additional components would materially change the characteristics of applicant’s invention if an applicant contends that additional materials in the prior art, in this case the additives as taught by Hansen, are excluded by the recitation of “consisting essentially of”. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also Ex parte Hoffman, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989). See MPEP 2111.03 [R-2].

Regarding claim 27, since Hansen’s additives are non-essential component of the coating solution, the examiner concludes that the coating process of Hansen in view of Clifford teach a coating solution consisting of the claimed Fe(II) ions, Mn ions, phosphate ions, nitrate ions and nitroguanidine ions in amounts that are significantly similar to the coating solution used in the claimed coating process. The remaining claim limitations are rejected for the same reasons set forth in the rejection of claim 17 above.

4. Claim 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen in view of Clifford, and further in view of Bittner et al. 5,795,408 (Bittner).

The teachings of Hansen in view of Clifford are set forth in paragraph 3 above.

However, Hansen in view of Clifford do not explicitly teach the addition of the claimed complex-forming agent.

Bittner teaches the addition of complexing agents for the alloying constituents of steel, including citric acid, to phosphating solutions in order to stop or reduce the formation of sludge, while allowing the formation of a phosphate coating on a galvanized surface, as recited in claims 20-21 (col. 2, lines 35-44; col. 3, lines 36-45).

Therefore, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to add a complexing agent, such as citric acid, to the composition of Hansen in view of Clifford in order to provide the desirable effect of stopping or reducing the formation of sludge, while allowing the formation of a phosphate film on the surface of a galvanized substrate, as recited in Bittner (col. 2, lines 35-44).

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen in view of Clifford, and further in view of Oei et al. 4,824,490 (Oei).

The teachings of Hansen in view of Clifford are discussed in paragraph 3 above.

However, Hansen in view of Clifford do not explicitly teach the replacement of the manganese ions with manganese carbonate.

Oei teaches the use of manganese carbonate to control the concentration of free acid (col. 3, lines 4-8)

Therefore, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to add manganese carbonate to the composition of Hansen in view of Clifford in order to

Art Unit: 1793

provide the desirable effect of controlling the concentration of free acid, as taught in Oei (col. 3, lines 4-6).

6. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen in view of Clifford, and further view of Shaw 2,987,427 (Shaw).

The teachings of Hansen in view of Clifford are discussed in paragraph 3 above.

However, Hansen in view of Clifford do not explicitly teach the step of subjecting the work pieces to sliding friction or the fabrication of the work pieces into axles, gear mechanisms and engine pistons.

Shaw teaches an example of a nitroguanidine manganese phosphate coated engine piston (i.e. a work piece subjected to sliding friction) (col. 5, lines 60-75; Example V). Shaw further teaches that the coating of the sliding work piece with manganese phosphate has the desirable effect of providing a wear resistant coating that liberates less sulfur dioxide and/or other chemicals (col. 1, lines 62-68):

Therefore, one of ordinary skill in the art would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to subject the coated work piece to sliding friction or to fabricate the work piece into an engine piston because the use in said applications is known, as taught in Shaw and one of ordinary skill in the art would have been motivated to provide a sliding surface that liberates less sulfur dioxide and/or other chemicals, as taught in Shaw (col. 1, lines 62-67).

***Response to Arguments***

7. Applicant's arguments filed 24 May 2010 have been fully considered but they are not persuasive.

In the remarks, applicant argues that Hansen was published 30 years after Clifford, yet Hansen does not teach using accelerators. In addition, one of ordinary skill in the art would not have been compelled to add an accelerator to Hansen given the restricted bath composition as taught by Hansen.

The examiner does not find applicant's argument convincing because adding accelerator such as nitroguanidine to a manganese phosphate coating solution has been well known and practiced in the art as shown by Clifford. Although Hansen does not explicitly teach using accelerators, Hansen does not provide any negative teachings that would have compelled one of ordinary skill in the art from not using the accelerators such as nitroguanidine. The examiner maintains that it would have been within the skill of one of ordinary skill in the art to have incorporated a known manganese phosphate coating solution accelerator such as nitroguanidine as taught by Clifford into the coating solution of Hansen with the expected success.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.



Art Unit: 1793

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/  
Supervisory Patent Examiner, Art  
Unit 1793

LLZ